# PATENT SPECIFICATION

Application Date: Oct. 14, 1927. No. 27,345/27. **295,859**

Complete Left: March 10, 1928.

Complete Accepted: Aug. 23, 1928.

PROVISIONAL SPECIFICATION.

## Improvements in or relating to Electric Cigar Lighters.

I, HEINZ AGATZ, a German citizen, of 123—124, Rudower-Chaussee, Berlin-Adlershof, Germany, do hereby declare the nature of this invention to be as follows:—

The present invention relates to electric cigar lighters, and refers more particularly to those employing electric current and suitable for use on electrically driven or other vehicles having a supply of electric current. Normally the igniting member is positioned in a switch box, from which it can be readily removed, so that, after the current has been switched on, it may be readily lifted out and used to light a cigar or cigarette. It is of great importance in such cigar lighters, that the lighting member should be brought to a state of permanent incandescence by a current flow of short duration. But with the hitherto known types of cigar lighter, this has been impossible, because the incandescent member has had its surface exposed to the atmosphere, so that current has had to be transmitted for a fairly long time through the heating resistance, before same could become sufficiently heated to fulfil its function with even one single cigar or cigarette.

According to the present invention, the above disadvantage is removed and more effective service obtained from the cigar lighter, by arranging that the incandescent surface of the igniter is positioned face to face with the inner front surface of the switch box, so that any contact between the igniting surface and the outer air is avoided, and the glowing body shut off in a chamber. The ignition efficiency is still further increased if the lighting member fits into a capsule-like cavity in the bottom of the switch box, thus providing for the incandescent body a heating chamber which closely surrounds it.

Though the incandescent body, when once it has been removed from the switch box, is no longer connected to the current supply, it still glows long enough to allow of 4—5 cigars or cigarettes being lighted in succession.

If the igniter employed has an incandescent member which is curved sufficiently far forwardly, the lighter may also be conveniently used for the lighting of pipes.

The invention will now be described in further detail, with the aid of the accompanying sheet of drawings, wherein:—

Figure 1 is a side view of the improved lighter,

Figure 2 is a vertical section through same,

Figure 3 is a plan view of the switch box, with the igniting member removed,

Figure 4 is a plan view of the igniting member as seen from the heating surface, and

Figure 5 is a sectional view through the heating element.

The switch or connecting box $a$ is a metallic body adapted to receive the readily removable igniting member carrier $b$ which is also of metal. To hold and facilitate removal of the holder $b$, a spring chamber $c^1$ containing coil springs $c$ is provided in the switch box. The lower part of the carrier $b$ is provided with a conical projection $b^1$ having a small groove cut therein, which, when the carrier $b$ is pressed into the switch box, engages the springs $c$ in such manner that not only are these two parts held in engagement but electrical connection is also established between them.

The carrier $b$ contains a cylindrical member $e$ which is of fire-proof and insulating material, in a cavity $e^1$ of which is secured a blade spring $e^2$. This blade spring $e^2$ is connected by a screw bolt $b^3$ with a contact ring $k^1$, with which effects electrical contact a blade spring $i$ which leads to a terminal $g$ insulatingly mounted in the casing. A second terminal $h$ is electrically connected to the body of the switch box. Thus the casing of the switch box is electrically connected through spring $c$ to the carrier $b$. From the body of the carrier $b$, a metal bridging strip $k$ insulated from ring $k^1$ leads to the outer metallic casing $f^1$ of the incandescent member. To this outer casing is connected one extremity of the spirally wound resistance wire or ribbon $f$, which is insulatingly embedded in the said casing of the incandescent member. The other extremity of the resistance wire or

[Price 1/-]

ribbon leads, through the screw bolt $l$ to the brass stud $l^1$.

When the insulating button $m$ is pressed and the spring blade $e^2$ thereby brought into electrical contact with brass stud $l^1$, a circuit is established, the path of the current being as follows:—

From terminal $g$, through spring $i$, to the contact ring $k^1$, and thence via bolt $b^3$ to the spring $e^2$, through $l^1$ and $l$, through the heating wire $f$ and casing $f^1$ to the bridge piece $k$, and thence through the metallic parts of the switch box $a$ to the terminal $h$.

The incandescent member $f$ engages, as shown in Figure 2, in a dish-like cavity $a^1$ in the all-metal switch box $a$, so that a completely enclosed chamber is formed, which may be regarded as the heating chamber, inasmuch as, when the current circuit is closed, the incandescent temperature produced is subject to no cooling whatever from without, i.e. there is no outward radiation from said chamber. It is, therefore, possible, by a sufficiently long passage of current, to heat the incandescent member so highly as to impart to it a temperature sufficient for several ignitions.

Dated this 14th day of October, 1927.

FORRESTER, KETLEY & Co.,
Chartered Patent Agents,
Jessel Chambers, 88/90, Chancery Lane,
London, W.C. 2, and
Central House, 75, New Street,
Birmingham,
Agents for the Applicant.

COMPLETE SPECIFICATION.

## Improvements in or relating to Electric Cigar Lighters.

I, HEINZ AGATZ, a German citizen, of 123—124, Rudower-Chaussee, Berlin-Adlershof, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to electric cigar lighters, and refers more particularly to those employing electric current and suitable for use on electrically driven or other vehicles having a supply of electric current. Normally the igniting member is carried by a holder adapted to be positioned in a casing from which it can be readily removed, so that, after the current has been switched on by a switch incorporated in the holder, the holder may be readily lifted out and the incandescent igniting member used to light a cigar or cigarette. It is of great importance in such cigar lighters, that the lighting member should be brought to a state of permanent incandescence by a current flow of short duration. But with the hitherto known types of cigar lighter, this has been impossible, because the incandescent member has had its surface exposed to the surrounding air in the casing, so that current has had to be transmitted for a fairly long time through the heating resistance, before same could become sufficiently heated to fulfil its function with even one single cigar or cigarette.

According to the present invention, the above disadvantage is removed and more effective service obtained from the cigar lighter, by arranging that when the holder is positioned in the casing the incandescent surface of the igniter is located within a cup or depression in the bottom or rear wall of the casing, so that any contact between the igniting surface and the surrounding air in the casing is avoided, and the glowing body is shut off in a heat accumulating chamber. The cup or depression is of such a size as to provide for the incandescent body a heating chamber which closely surrounds it.

Though the incandescent body, when once it has been removed from the switch box, is no longer connected to the current supply, it still glows long enough to allow of 4—5 cigars or cigarettes being ignited in succession.

If the igniter employed has an incandescent member which is curved sufficiently far forwardly, the lighter may also be conveniently used for the lighting of pipes.

The invention will now be described in further detail, with the aid of the drawings accompanying the Provisional Specification hereof, wherein:—

Figure 1 is a side view of the improved lighter,

Figure 2 is a vertical section through same,

Figure 3 is a plan view of the switch box, with the igniting member removed,

Figure 4 is a plan view of the igniting member as seen from the heating surface, and

Figure 5 is a sectional view through the heating element.

The switch or connecting box $a$ is a metallic body adapted to receive the readily removable igniting member car-

rier $b$ which is also of metal. To hold and facilitate removal of the holder $b$, a spring chamber $c^1$ containing coil springs $c$ is provided in the switch box. The lower part of the carrier $b$ is provided with a conical projection $b^1$ having a small groove $b^2$ (Figure 2) cut therein, which, when the carrier $b$ is pressed into the switch box, engages the springs $c$ in such manner that not only are these two parts held in engagement but electrical connection is also established between them.

The carrier $b$ contains a cylindrical member $e$ which is of fire-proof and insulating material, in a cavity $e^1$ of which is secured a blade spring $e^2$. This blade spring $e^2$ is connected by a screw bolt $b^3$ with a contact ring $k^1$, with which effects electrical contact a blade spring $i$ which leads to a terminal $g$ insulatingly mounted in the casing. A second terminal $h$ is electrically connected to the body of the switch box. Thus the casing of the switch box is electrically connected through springs $c$ to the carrier $b$. From the body of the carrier $b$, a metal bridging strip $k$ insulated from ring $k^1$ leads to the outer metallic casing $f^1$ of the incandescent member. To this outer casing is connected one extremity of the spirally wound resistance wire or ribbon $f$, which is insulatingly embedded in the said casing of the incandescent member. The other extremity of the resistance wire or ribbon leads, through the screw bolt $l$ to the brass stud $l^1$.

When the insulating button $m$ is pressed and the spring blade $e^2$ thereby brought into electrical contact with brass stud $l^1$, a circuit is established, the path of the current being as follows:—

From terminal $g$, through spring $i$, to the contact ring $k^1$, and thence via bolt $b^3$ to the spring $e^2$, through $l^1$ and $l$, through the heating wire $f$ and casing $f^1$ to the bridge piece $k$, and thence through the metallic parts of the switch box $a$ to the terminal $h$.

The incandescent member $f$ engages, as shown in Figure 2, in a dish-like cavity $a^1$ in the all-metal switch box $a$, so that a completely enclosed chamber is formed, which may be regarded as the heating chamber, inasmuch as, when the current circuit is closed, the incandescent temperature produced is subject to no cooling whatever from without, i.e. there is no outward radiation from said chamber. It is, therefore, possible, by a sufficiently long passage of current, to heat the incandescent member so highly as to impart to it a temperature sufficient for several ignitions.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electric cigar lighter having a removable holder for an incandescent member which holder fits into the casing of the lighter, wherein the part thereof carrying the incandescent member fits in a cup or depression in the bottom or rear wall of the casing, said cup acting as a heat accumulating chamber and screening the incandescent member entirely from the surrounding air in the casing.

2. A device according to Claim 1, wherein the holder has a conical projection carrying the incandescent member and fitting into an opening in the casing, said conical member having a groove and said casing having spring means adapted to engage in said groove and hold the holder resiliently in position in the casing.

3. A device according to Claim 2, wherein the spring means conducts current to the incandescent member through the metal of the casing and holder.

4. Electric cigar lighters substantially as herein described with reference to, and as illustrated by the accompanying drawings.

Dated this 10th day of March, 1928.

FORRESTER, KETLEY & Co.,
Chartered Patent Agents,
Jessel Chambers, 88/90, Chancery Lane,
London, W.C. 2, and
Central House, 75, New Street,
Birmingham,
Agents for the Applicant.

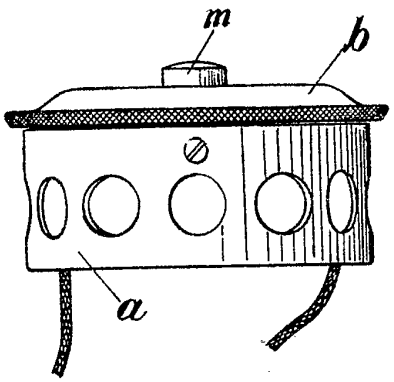


Fig. 1

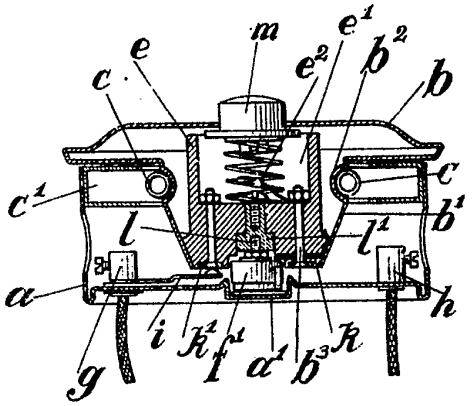


Fig. 2

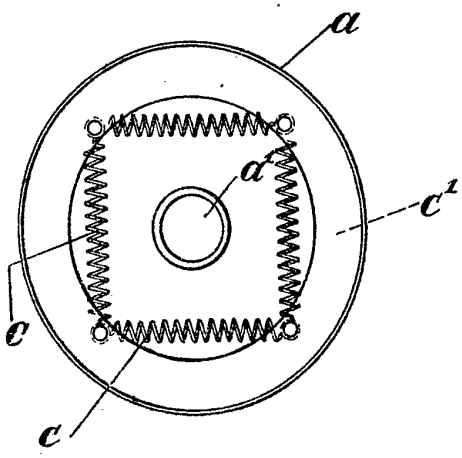


Fig. 3

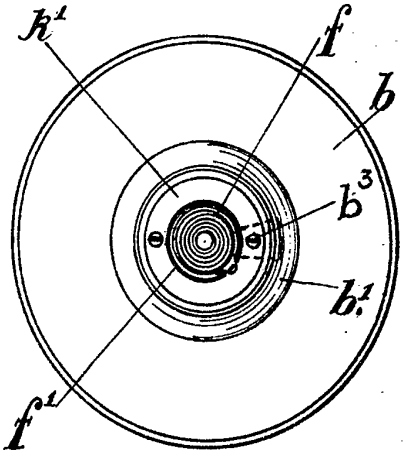


Fig. 4

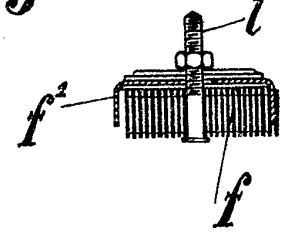


Fig. 5

Charles & Read Ltd. Photo Litho.